

California's Diesel Retrofit Program

Tom Cackette

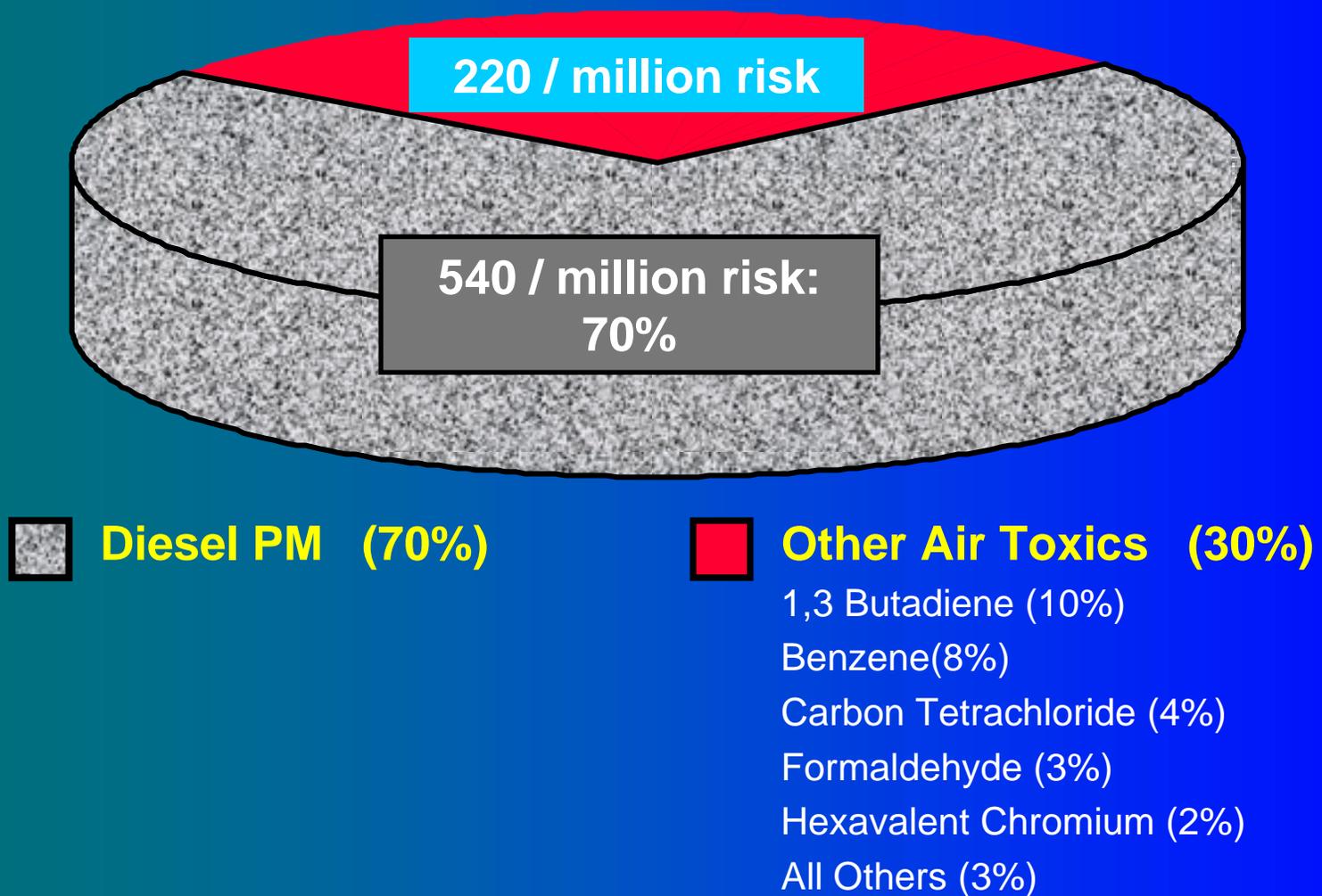
FACA Mobile Source Sub-Committee
January 17, 2001

California Environmental Protection Agency

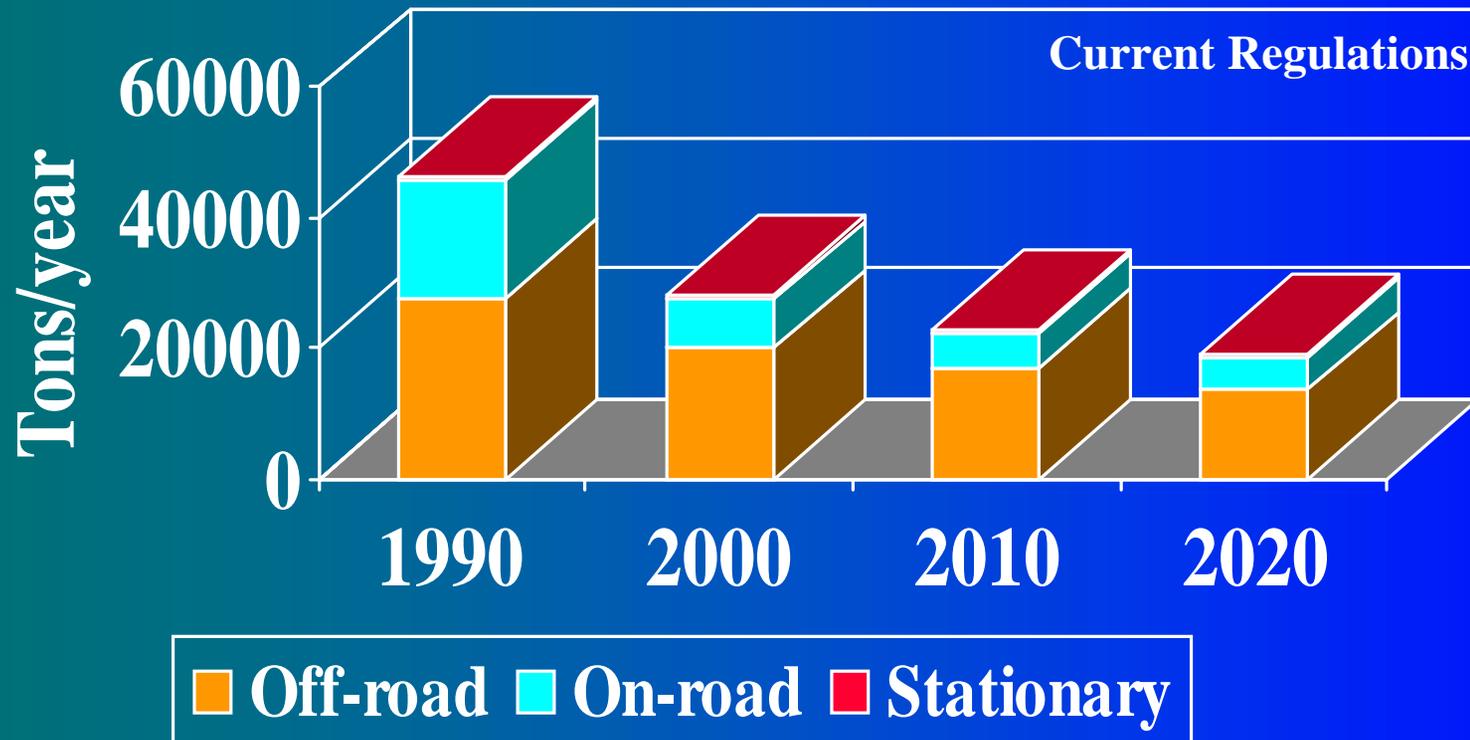


Air Resources Board

70% of Air Toxic Risk From Diesels



Diesel PM Emissions

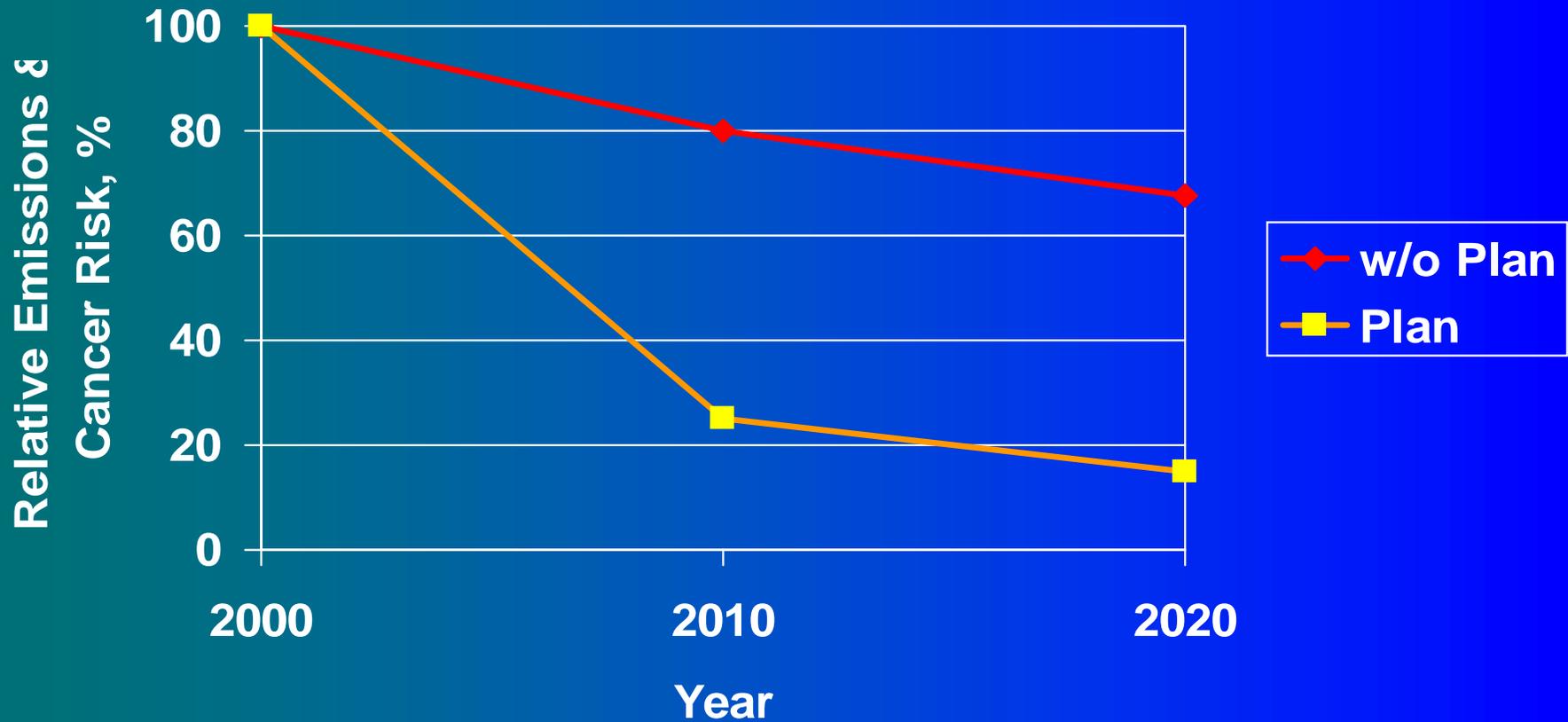


Statewide

Diesel Risk Reduction Plan

- ◆ Adopted September, 2000
- ◆ Goal:
 - ◆ Reduce risk of exposure to diesel PM to near zero
 - ◆ Apply PM controls to all diesel engines
 - ◆ Integrate with NO_x reduction efforts (SIP)

PM Emissions and Risk Reduced: 75+% w/ Plan



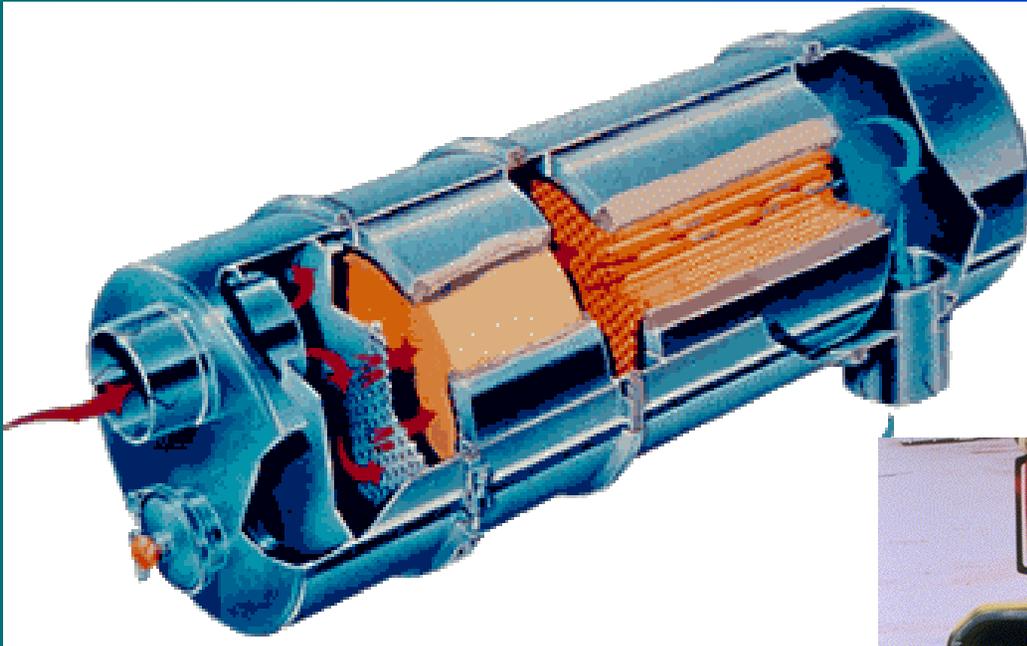
Elements of the Diesel Plan

- ◆ Reduce emissions from new engines
 - ✓ Trucks
 - Off-road
- ✓ Provide ultra-low sulfur fuel (<15ppm)
 - ✓ Available in CA now
- ◆ Ensure in-use emission performance
- ◆ Require retrofit of existing engines w/ filters

Diesel PM In-Use Retrofit Program

- ◆ Achieves 80% of Plan's reductions (2010)
- ◆ Retrofit every Diesel in California w/ filters
 - ◆ Feasibility
 - ◆ Exposure
- ◆ Approaches
 - ◆ Regulation
 - ◆ Incentive funds
 - ◆ Voluntary action
- ◆ Effectiveness
 - ◆ Minimum 85% PM reduction/vehicle
 - ◆ Get NOx reduction when feasible

Diesel Particulate Filter Technology



Implementation

Filter Retrofits

- ◆ Regulation
 - ◆ Urban transit buses
 - ◆ 4500 filter retrofits starting 2003
 - ◆ New engines - filters required 2002
 - ◆ Trash trucks
 - ◆ Regulation under development
- ◆ Permit conditions
 - ◆ e.g. major construction projects

Implementation (cont.)

- ◆ Incentive funding
 - ◆ School buses
 - ◆ \$12.5 million
 - ◆ ~2000 filter retrofits, beginning 2001
 - ◆ Moyer program
 - ◆ \$100 million FY01/02
 - ◆ Incremental cost of new, repower, retrofit paid
 - ◆ NO_x focus
 - ◆ PM filters where feasible

Implementation (cont.)

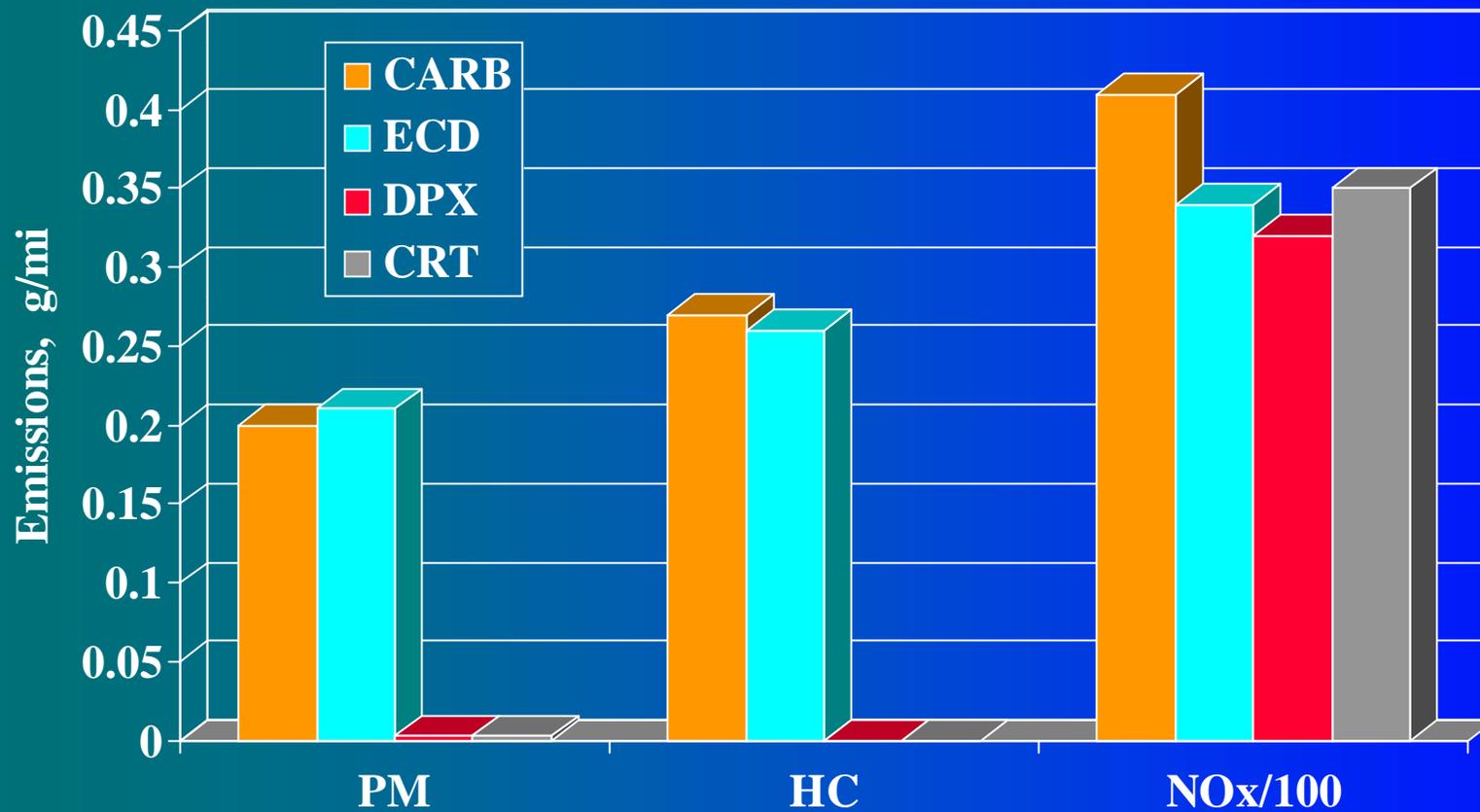
- ◆ Voluntary
 - ◆ City of Los Angeles
 - ◆ 1300 vehicles
 - ◆ Caltrans (state DoT)
 - ◆ Clean new purchases (e.g. LPG)
 - ◆ Retrofit filters (~600)
 - ◆ Need recognition for others
 - ◆ Labeling
 - ◆ Publicity

Demonstration Programs Support Implementation

- ◆ BP ECD - (# vehicles with filters)
 - ◆ Ralph's grocery trucks (10)
 - ◆ BP tanker trucks (10)
 - ◆ LA County MTA (4)
 - ◆ Hertz equipment rental (10)
 - ◆ LA City Sanitation (10)
 - ◆ People movers/local amusement park (10)
 - ◆ School busses San Diego (10)
- ◆ School Busses LA (39)
- ◆ Construction equipment (19)

Ralph's Grocery Fleet Demo

Low Sulfur Fuel & PM Filters



City Suburban Heavy Vehicle Route

CARB = ~ 150 ppm S

ECD = <15 ppm S

Technical Support & Outreach

- ◆ International Advisory Committee
- ◆ Certification of retrofit devices
- ◆ Testing and evaluation
- ◆ Application assessment
- ◆ Partnership with local agencies
- ◆ Coordination with U.S. EPA's program

EPA's Help Needed

- ◆ Adopt filter-based PM standards for new off-road engines
 - ◆ Tier 3 off-road engines - ~2006
 - ◆ Tier 4 standards similar to trucks (NO_x too!)
- ◆ Ultra-low sulfur fuel for off-road
 - ◆ 5000 ppm sulfur standard now
 - ◆ <15 ppm needed
- ◆ Implement retrofit program
 - ◆ Encourage 85%+ PM control devices

Benefits



Plan will reduce:

- PM emissions
- Cancer risk
- Respiratory impact

Other benefits include:

- Improved visibility
- Reduced soiling



For More Information

- ◆ Diesel Risk Reduction Website
 - ◆ www.arb.ca.gov/toxics/diesel/diesel.htm
 - ◆ Sign up to receive notices
- ◆ Talk to a real person ((626-575-6973), or ____@arb.ca.gov
 - ◆ Annette Hebert - Manager, In-use Diesel Control Branch
 - ◆ G. Scott Rowland - Manager, Assessment Section
 - ◆ Nancy Steele, PhD - Manager, Implementation Section